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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/026,151	12/19/2001	Ertugrul Berkcan	RD-28,476	8199

7590 02/07/2006  
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EXAMINER

NGUYEN, JIMMY

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 02/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

EK

<b>Office Action Summary</b>	Application No. 10/026,151	Applicant(s) BERKCAN ET AL.	
	Examiner Jimmy Nguyen	Art Unit 2829	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 June 2005.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 3, 6, 7, 9 - 13, 16, 17, 19 - 24, 26, 28, 29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 3, 6, 7, 9 - 13, 16, 17, 19 - 24, 26, 28, 29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### Response to Argument

a. Applicant's arguments with respect to claims 1 – 4, 6 – 14, 16-24, and 26 – 29 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 3, 6, 7, 9, 10 are rejected under 35 U.S.C. 102(b) as being anticipated by Berkcan et al (US 5, 587,651).

**As to claim 1**, Berkcan et al disclose (fig 1) a current sensor (10) for an apparatus comprising;

A conductor (12, 16, 18) comprising an aperture (24) therethrough and a plurality of hall effect devices (50) inserted at least partially within aperture (24), conductor (12, 16, 18) is configured to generate a magnetic field having a pre-determined shape, each hall effect device (50) configured to detect pre-determined shape and generate an output and each said hall effect device (16)

configured to be insensitive to magnetic fields having shapes other than pre-determine shape.

**As to claim 3**, Berkcan et al disclose (fig 1) the magnetic field has a pre-determined spatial dependence.

**As to claim 6**, Berkcan et al disclose (fig 1) the hall effect device (50) output comprises a non-linear component.

**As to claim 7**, Berkcan et al disclose (fig 1) the current sensor further comprise a plurality of hall effect devices (50) and separated by pre-determined distance

**As to claim 9**, Berkcan et al disclose (figs 1, 5) the magnetic field comprises at least a first magnetic field component having a first direction and a second magnetic field component having a second direction different from first direction and the at least two magnetic field components having the same direction (see fig 5)

**As to claim 10**, Berkcan et al (figs 1, 5) a conductor (12,16,18) comprising an aperture (24) therethrough and a plurality of hall effect devices (50) inserted at least partially within aperture (24), conductor (12, 16, 18) is configured to generate a magnetic field having a pre-determined shape, each hall effect device (50) configured to detect pre-determined shape and generate an output (at 20) and the magnetic field comprises at least a first magnetic field component having a first direction (see, fig 5) and a second magnetic field component having a second direction different from first direction and predetermined shape, each said hall effect device configured to detect pre-determined shaped and generated an output and each said hall effect device (50) configured to be insensitive to magnetic fields having spatial dependencies other than a spatial dependence defined by the pre-determined shape.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berkcan et al (US 5, 587,651).in view of Dames et al (US 6414475)

**As to claim 2**, Berkcan et al (figs 1, 5) the current sensor. However, Berkcan et al do not disclose the current sensor using the residential electricity meter. On the hand, Dames et al teach the current sensor (1) using for the residential meter (20).

It would have been obvious to one having an ordinary skill in the art at the time of the invention was made to modify the current sensor of Berkcan and use within the electricity meter of Dames et al for the purpose of sensing current in the power line.

5. Claims 11 – 13, 16, 17, 19 – 24, 26, 28, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plis et al (US 5854995) in view of Berkcan et al (US 5, 587,651).

**As to claims 11, 12, 20, 21, 22, 29**, Plis et al disclose (fig 1) a residential electricity meter and a method for sensing voltage and current comprising a voltage sensor (110) and a current sensor (120).

However, Plis et al is silent on the structure of the current sensor comprising a conductor comprising an aperture therethrough and a plurality of hall effect devices inserted at least partially within slit, conductor is configured to generate a magnetic field having a pre-determined shape, each hall effect device configured to detect pre-determined shape and generate an output .

On the other hand, Berkcan et al disclose (figs 1, 5) a current sensor comprising a conductor (12, 16, 18) comprising an aperture therethrough (24) and a plurality of hall effect devices (50) inserted at least partially within aperture (24), conductor (12, 16, 18) is configured to generate a magnetic field having a pre-determined shape, each hall effect device (50) configured to detect pre-determined shape and generate an output (at 20).

It would have been obvious to one having an ordinary skill in the art at the time of the invention was made to modify the current sensor within the electricity meter of Plis et al and use within the current sensor of Berkcan et al for the purpose of sensing current in the power line.

**As to claims 13, 23,** Berkcan et al disclose (figs 1, 5) the magnetic field has a pre-determined spatial dependence.

**As to claims 16, 24,** Berkcan et al disclose (figs 1, 5) the hall effect device (50) output comprises a non-linear component.

**As to claims 17, 26,** Berkcan et al disclose (figs 1, 5) the current sensor further comprise a plurality of hall effect devices (50) and separated by pre-determined distance

**As to claims 19, 28**, Berkcan et al disclose (figs 1, 5) the magnetic field comprises at least a first magnetic field component having a first direction and a second magnetic field component having a second direction different from first direction and the at least two magnetic field components having the same direction (this cause by the hall effect devices 50).


### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Nguyen whose telephone number 571 -272 - 1965. The examiner can normally be reached on M - F from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayn Fammy, can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN.  
Feb 2, 2006

  
VINH NGUYEN  
PRIMARY EXAMINER  
A-4-2829  
02/06/06